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ABSTRACT

To explore the issue of communications technology and its impact on the rural school, the National Institute of Education (NIE) convened a 2-day workshop, bringing together 16 participants whose combined expertise and collective experience encompassed rural education and a variety of communications technologies and their applications. The primary goal was to provide NIE with advice on how it can improve the effectiveness and efficiency of the delivery of educational services to rural learners. This report of the meetings provides an overview of the three papers commissioned and distributed to the participants prior to the meetings, excerpts from oral reports, and summaries of the activities of the three work groups during the meeting. (AH)

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TECHNOLOGY IN THE SERVICE OF RURAL EDUCATION

Proceedings of a Workshop on Telecommunications in the Service of Rural Education, held in Washington, D. C., 8-9 July 1980, and sponsored by the National Institute of Education.

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TECHNOLOGY IN THE SERVICE OF RURAL EDUCATION

In the first decades of the Twentieth Century, life in Rural America was revolutionized. The automobile brought freedom from the physical isolation which separated the farm from the town. The telephone provided new instant communication with distant neighbors and with the world. Electricity illuminated the farmhouse and eliminated many of the most onerous chores in the barn. The radio brought rural dwellers the same entertainment, the same news, the same participation in world events which it brought to homes in the largest cities. All this in the first three decades of the present century.

But even as the century draws to an end, there is, off the Maine coast, a one-room schoolhouse without indoor plumbing. Kerosene lamps from a hundred years ago stand ready for use whenever a trawler cuts the cables which bring electricity and telephone from the mainland.

All across America, there are small rural schools where the problems of isolation and the limits of local resources may be less dramatic, but are no less significant. But there are pluses as well as minuses for America's small schools: troubles may be smaller and school spirit greater; graffiti less evident and responsiveness more visible; less time attempting to maintain order, more time-on-task by teachers in teaching, students in learning.

In the meantime, in a world in which the Model T has given way, first to the Thunderbird, then to the Toyota, the Stromberg-Carlson to the Sony, and the party line to time sharing and distributed processing, the Essential Question remains:

How can small rural schools be freed from their handicaps--remoteness, size-limited resources--without sacrificing their strengths to overcome their weaknesses?

Can technology (and in particular, communications technology) help? Transportation technology--the school bus--has been employed to bring about school centralization, but at a price in dollars, energy, and human discomfort which is now recognized as exorbitant and which grows higher daily.

The educational enterprise is, perhaps, that segment of American society least touched by the "communications revolution" which is bringing video cassettes and video games into the homes, word processing and data

communications into the office, and automation to the factory and farm. If communications technology has had little impact on the urban and suburban school, it has had still less on the rural school. But must that continue to be so?

To explore that issue, the National Institute of Education convened a two-day workshop, bringing together sixteen participants whose combined expertise and collective experience encompass rural education and a variety of communications technologies and their applications.

The primary goal was to provide the National Institute of Education with advice on how the Institute can improve the effectiveness and efficiency of the delivery of educational services to rural learners. Among the objectives:

1. To identify and rank the most pressing needs of rural and isolated learners.

2. To identify alternative technology mixes that can address those needs economically and effectively.

3. To generate a summary report including recommendations and suggested plans that detail:

    a. an agenda for potential NIE activities dealing with populations and technology mixes that appear to be the most promising;

b. the significant needs analyses, technical, evaluation, and cost issues that the Institute should consider when implementing any rural technology initiative;

c. a suggested timeframe and overall cost estimate necessary to mount an effective rural technology initiative.

In preparation for the meeting, three papers were commissioned and distributed in advance to the participants. Dr. Jerry Fletcher's paper discussed "Applications of Electronic Technologies to Rural Education;" Dr. Louis A. Bransford's paper was entitled "Telecommunications in Rural America: Special Populations, Special Problems;" while "Telecommunications and the Rural American, Today and Tomorrow," was the title of the paper by Dr. Robert T. Filep. At the workshop, each of the authors made an informal presentation, summarizing his written work.

The meeting began with an overview of the agenda and objectives by Kevin Arundel and Thomas Schultz of the NIE staff. Dr. Gus Root took the chair, and outlined the workshop's format and structure.

Dr. Augustin A. ("Gus") Root has had a long and varied career which spans education and communications. Until 1979, he was Assistant to the President of Johnson State College in Vermont. He has been a consultant to the East-West Communications Institute, Honolulu, to UNESCO in Penang, Malaysia, and to Syracuse University, on the subject of international communications planning.

The formal presentations began with the authors of the papers.

Dr. Jerry Fletcher reviewed the principal ideas in his "Applications of Electronic Technologies to Rural Education." He noted that the core question is not what technology can do--in the near future almost anything desired will be technically possible, he declared--but rather a matter of "faith," a new vision which will see technology in the context of a transforming insight which will raise rural education and its needs to a new and higher level of perception and priority in the eyes of decision-makers, as, for example, heart disease has become a prime focus of attention and effort at the National Institutes of Health.

"Small¬ess,¬"he suggested, could be such a transforming concept, and the solution to the problems of rural schools might provide the key to the solution of problems which plague urban and suburban systems where small schools are presently seen as costly, inefficient, and subject to closing.

Even in the city, the advantages of small schools are many: education in small units is more humane. . .more time is spent on-task. . .violence and discipline problems diminish. There are also administrative advantages: special school programs could be provided to meet the needs of special learners, some schools emphasizing basics, others creative skills; some responding to parents who want no sex education for their children, others who want fuller discussion of human sexuality.

Dr. Jerry L. Fletcher's academic background is in the History of Science, but his current interests are in the design and implementation of improved educational experiences. He has served as Senior Policy Analyst in the Office of the Deputy Assistant Secretary for Education Policy Development, Department of Health, Education and Welfare, and is now president of Manifest Learning Systems, Tiburon, California.

To meet all these needs in the small school environment, technology will have to provide the means of support for quality instruction, comprehensiveness of programs, and cost-effectiveness.

While "75% of the case" can be made for using technology in the service of smallness, Jerry concluded, the possibility of putting rural education at the top of state and Federal policy priorities is remote. But because so many problems are shared by all schools, and because rural schools are generally nearer optimum size, it can be argued that rural schools provide the needed laboratory to develop and test the ways in which technology can be applied to providing comprehensive and effective education through small schools.

"Rural schools are thus a unique laboratory for the development and testing of ways of providing comprehensive and effective education through small schools," he wrote in his paper. "In addition, modern communications technology is more free of geographic constraints than any other service delivery mechanism. The low population density of rural America makes using

it as a development site for anything else substantially more expensive; it is almost a unique strength of electronic communications that they can bridge physical distance cheaply."

But, Jerry cautioned, since both the equipment and the programming for technology-based education are expensive, there will be a tendency in technology development to ignore rural schools. "The only effective approach is to emphasize the broad and general advantages of providing education effectively and cheaply to small groups, and to make the case that rural schools are the ideal place to have in mind when designing."

Dr. Louis Bransford pointed out that rural education, and its problems, are constants on the American scene--no passing fad, but a continuing theme. In his State of the Union message, President Carter emphasized the need to address the ever-pressing problems of Rural America: to overcome the problems of isolation, to promote economic development, to meet basic human needs, to protect the quality of rural life, to assure equity in the administration of Federal programs, and to build a more effective partnership among Federal, state and local governments and the private sector in meeting locally-defined rural development priorities.

Lou drew from his personal experience in educational communications to site cases in which well-funded experiments and demonstrations failed to take root in rural soil.

Louis A. Bransford is Vice President for Service Development for the Public Service Satellite Consortium. Prior to joining the PSSC he served as Director of Utilization for the Satellite Technology Demonstration, a project of the Federation of Rocky Mountain States which utilized the world's first broadcasting satellite, NASA's ATS-6, to deliver school and community television programs directly to rural communities. From 1966 to 1972, he was a professor of Education at the University of New Mexico.

While there is interest--and financial support--for experimentation and demonstrations, there appears to be little which survives the initial injection of outside Federal, state, or foundation funding. The problems he identified included the following:

- Available dollars are usually for capital expenditures, seldom for programming and "software."

- Regulations require a "teacher of record" present in the classroom.

- Non-technical problems--institutional and personal--are often critical.

- The inherent conflict between the need for programs which can be fitted to the individual schedules of teachers and the need for large scale programming which can take advantage of economies of scale.

- The institutional perception that telecommunications and delivery systems are a part of the problem, rather than a part of the solution.

Noflett Williams chose to present his experiences and insights in oral form, in lieu of a formal paper, and to cite several specific examples of the successful use of technology in the service of rural education. He began with some dicta:

Successful projects are those which tap into existing power structures. Not those which attempt to build new organizations, but those which influence the organization which are already in place.

Current population trends from urban and suburban America back to rural areas is an important force for change.

Projects designed to serve rural schools projects should look to, and perhaps coordinate with, the many other services which rural dwellers get from county, state, and federal agencies and from colleges and universities.

It is essential that services be acceptable to end-users and to the local gate-keepers.

The use of technology will play a significant role in the development of new services to rural schools.

> Noflett Williams has been with the Appalachian Community Service Network and its predecessor, the Appalachian Educational Satellite Project, since 1974. He has been Director of Institutional Research at Tennessee Technological University, and has been on the faculties of George Peabody and Southern Union Colleges.

The examples of successful innovation Noflett described in the print materials which he provided:

The Western Wisconsin Coommunications Cooperative is a broadband, multi-service telecommunications network serving all of Trempealeau County. The Cooperative uses microwave links to interconnect CATV systems in the county and program origination is feasible from any community.

In Idaho, the University of Idaho is developing a program to provide educational opportunities to the people in rural communities through the medium of video cassettes. Thirteen video resource centers are located in public libraries where the cassettes are available for viewing or may, like conventional books and records, be checked out. The libraries are also authorized to show the course programs over local cable television, where such systems are available.

At Itawamba Junior College, Tueplo, Mississippi, a new low-power UHF television "mini-station" will receive educational programs via communications satellite as a part of the Appalachian Community Service Network. The junior college will also produce some programs of its own, addressing local needs. CATV systems in a five-county area will extend the effective reach of the new mini-station.

Floyd Junior College, in Rome, Georgia, is another site affiliate of the ACSN and its predecessor, the Appalachian Educational Satellite Project. In addition to cablecasting ASCN programs and offering undergraduate credit the college telecourses, FJC's "TV Outreach Program" delivers tapes of the satellite programs to six communities in northern Georgia, adding another 50,000 potential users.

The final presentation was made by Dr. Robert T. Filep, who examined the characteristics of the rural environment, its present and potential communications resources, and gave an overview of emerging communications developments and opportunities. He reviewed some of the noteworthy applications of telecommunications in the service of rural education: the satellite experiments in the Pacific Basin, the U.S., Canada, and India.

Bob reviewed the lessons to be learned from research, including the data on the effective use of television and importance of feedback mechanisms which can provide learner participation and interactivity.

His presentation, and his paper, incorporated a number of recommendations:

1. Planning should begin immediately on a detailed 5-10 year plan.

2. An assessment of rural educational needs and of available telecommunications options should be undertaken and integrated with data from the National Telecommunications and Information Administration, the Farm and Home Administration, and other relevant entities.

3. Education's plans should be coordinated with those of other sectors, users and potential users of telecommunications--the better to spread costs.

4. Many of the recommendations of the National Seminar on Rural Education and the Regional Rural Roundtable could be realized through communications technology applications.

5. Discussions should be held with such entities as the Federal Communications Commission and the National Telecommunications and Information Administration to seek ways in which rural education can share in the contemplated expansion of broadband capabilities.

6. The Rural Electrification Administration should be consulted regarding its plans to fund cable communications systems.

7. The availability of financial support from NTIA's Public Telecommunications Facilities Program and the Department of Education's Telecommunications Demonstration Program should be investigated.

8. Programs which support the development of rural housing should be encouraged to incorporate criteria and specifications which will facilitate the installation and use of telecommunications technology.

9. Discussions should be initiated with the Federal Emergency Management Administration to determine if their proposed domestic emergency communications system could support education during non-emergency periods.

Bob Filip has spent twenty years in the humanistic application of computer and telecommunications technology. He has worked for the System Development Corporation, was Vice President and Director of Studies for the Institute for Educational Development, and served as Associate Commissioner of Education and Director of DHEW's National Center for Educational Technology. He was Director of the Learning Systems Center and professor at the University of Southern California's Annenberg School. He is president of the Communications 21 Corporation.

The afternoon session provided an extended opportunity for reactions and contributions from all of the members of the group. The first to contribute was Hugh Pursel.

> Hugh Pursel has been a rural educator for some thirty years--as teacher, principal and as assistant superintendent and superintendent of schools. He is Regional Administrator of the Kansas Educational Services Administration. The area he serves encompasses 10,000 square miles in the northwestern portion of the state. There are twenty school districts in this well-to-do agricultural region where the farmers' combines have air conditioning and television--but the schools do not.

He stressed the importance of human factors in applying technology to the meeting of rural educational needs. For example, despite an obvious and pressing need for community education--an approach which would use school facilities for a broad range of activities many hours in the day-- most superintendents' focus is on the traditional role of serving youngsters, and the school doors are shut and locked when the kids go home.

It's essential, Hugh emphasized, to design strategies that take into account the people who are to be involved. Superintendents are already swamped with detail, but not used to delegating authority or getting involved in cooperative ventures. They are not innovators ("But they'll come along if you prove it works"). Many of their problems are communications problems, and technology could help--in staff development, curriculum enrichment, and other areas, but rural educators will need the help of technology-knowledgable people who are also knowledgable about and

sympathetic to their pressures and problems. The building-level administrator is key. The American Association of School Administrators and its National Academy could provide one vehicle for greater awareness and staff development.

School Union #98, in Mount Desert, Maine, consists of eight districts--four on islands off the Maine coast. Mary Helen White came to Mount Desert as a teacher of reading and language arts in 1974 and stayed to become Assistant Superintendent of Schools, Acting Superintendent, and, from 1978-1980, Superintendent. A midwesterner by birth, she did her undergraduate work in Elementary Education at Emory University, Atlanta, and M.A. and Ed.D. studies at Denver University.

There are two one-room schools in School Union #98, and in one, hot running water is a recent innovation. When a trawler cuts the cable which brings electricity from the mainland, the schools, by kerosene lamp, look hardly different from those of 100 years ago. One school has a single student--who is handicapped. School Union #98 has invited all the pre-schoolers on the island to join him.

The handicap of isolation is one that strikes all of the island students. To go to high school, one must leave the island--from Swan's Island that's one-and-a-half hours by ferry and bus. Island kids, if they want to go to high school, must be boarded out on the mainland. Small wonder that the drop out rate is high, but islanders, despite low levels of formal education and modest incomes evidence a genuine appetite for learning. Thirty adults got their GED diplomas at 65 years of age.

Teachers suffer, too, by isolation from their peers, separated from their neighbors by vastly different levels of education and experience, strangers in a small world where the anonymity that's possible in the big city is unknown. So is privacy. One of the school superintendent's jobs is to make a monthly visit to an island teacher starved for intellectual companionship. A bottle of wine and woman-to-woman conversation can restore a teacher's morale. But if School Union #98 had a male superintendent such treatment would have tongues wagging.

Telecommunications could help, Mary Helen believes: adults, kids, teachers. Its not likely that money would be saved, but telecommunications could provide greater diversity in multi-grade classes and perhaps provide the means for teenagers to take high school classes without leaving home. "It'd be super for our gifted kids!"

In Utah, Kerry Nelson's concerns span the entire state. The distances students must travel can range up to 70-80 miles for some Native Americans. One new high school in a uranium mining community consists of several trailers, five teachers, and thirty-five students for whom programs are individualized. In another part of the state, a proposed new school with a K-12 enrollment of 75 will have no class schedules at all.

> Kerry Nelson's rural school experience goes back to his first teaching job. In 1960, he became the principal of a school at the bottom of Bryce Canyon, determined to make it the best small school in the state. One of the innovations in which the school participated was Art-by-Telephone, connected by conference telephone with a teacher (whom Kerry eventually hired) in Nevada who taught art in Oregon, Nevada, and Utah. In addition to having been a teacher and a principal, he has been a counselor for thirty years, a Ford Foundation Fellow, and a District Superintendent. He is now Director of the Utah State Small Schools Project.

Kerry reached back in his experience to those Bryce Canyon years to tell of a science-and-math teacher who came to Kerry as principal to insist that some way be found to give Bryce Canyon's bright students advanced math courses which he, himself, had not been prepared to teach. The teacher was ready and anxious to innovate, to find a solution to his problem. "He owned it!"

"I want you to pay attention to this," he told us, "because that's how innovations start and why they work--because they come from the user, the person who has ownership! The users have got to be the owners," he insisted. While the principal is a key person, and nothing is likely to be accomplished if the principal is not involved and excited, the involvement of the community is equally important. In Utah, small schools are establishing advisory committees which include teachers, students, and lay persons to interact with--not merely react to--the school board.

He noted the need for individualized in-service education for teachers as well as for students. "What do I need to be a better teacher?" In-service and pre-service education for rural teachers is a prime concern. Working with

the teacher training institutions in the state, Kerry and his colleagues hope to develop certification for rural teachers who serve in high schools with fewer than 250 students (schools bigger than that appear to generate sufficient state support for strong programs, he noted) in which teachers require broad competencies rather than specialization.

"I try to act as a consultant for the schools," Kerry explained, noting that he'd try to contact all of the projects Nofflet Williams had described, to get more details and information which he might pass on to Utah educators. "How about an 'idea bank' for rural schools?" he asked. "Or Bob Filep's suggestion of 'telecommunications agents' like county agents?"

Gail Parks raised a series of fundamental questions:

"How can 'local ownership'--that involvement of the local gate-keepers and members of the power structure--be achieved? Can local communities adequately identify their real needs? Are the states usurping the decision-making which once took place on the local level?"

Dr. Gail Armstrong Parks is the Education Director of the National Rural Center in Washington, D.C., where she previously served as Educational Research Specialist. Her Ph.D.--in the History of American Education--is from the University of Illinois at Urbana-Champaign. She holds a B.A. in English and American Literature from Limestone College and has done additional study at Jesus College, Oxford; George Washington University, the University of Vermont and at Yale.

Gail's questions elicited a number of responses, but perhaps Nofflet best summed it up with his description of the need for "bonds of trust" which must exist between those who are on the educational firing line and those who have the telecommunications expertise and the "outside" dollars.

Ted Carpenter drew upon his experience in rural Tennessee in where his work with parents and teachers led to the development of Broadside Video, a unique experiment in producing public affairs and educational programs for cable television and public broadcasting. The new technologies, and in particular, low cost TV recorders and cameras, are opening up the opportunities "to manipulate information electronically," and bringing what was once an expensive mass medium within the reach of small groups and individuals, Ted pointed out.

His use of such low-cost television as a tool in traditional folk studies and cultural anthropology provided illustrations for his argument that telecommunications can provide new means of "coming together." He urged that the current rush in the Congress and among communications policy makers to "deregulate" communications and open up competition to the traditional telephone be tempered by concern for the rural systems which are extensive, relatively sophisticated, and which, in his view, serve their clients well.

Edward H. ("Ted") Carpenter was educated at Tufts University, and by a variety of experiences which include service as a VISTA volunteer in Atlanta, Georgia, travel and study under the Leadership Development Program of the Ford Foundation, and work as Appalachian Regional Coordinator for Stanford University in the USOE Urban-Rural School Development Program. In 1972 he founded Broadside Video in central Appalachia. From 1975-1977 he was Executuve Director of the National Citizens' Committee for Broadcasting, a public interest organization concentrating on media issues. He served on the staff of the Carnegie Commission on the Future of Public Broadcasting and is now a media consultant and the publisher of Media Rare, a "selective alternative to TV Guide."

Ted noted that the rapid developments in communications, such as the explosive growth of microprocessers and the emergence of digital transmission, increasingly open new opportunities for point-to-point communications, but what is less available in rural areas are the options for the creation of "local loops" to tie the new technologies to the end users. . .except for the telephone.

Recent decisions, such as Microwave Communications, Inc.'s victory in a $1.5 billion suit against the Bell System, point in the direction of greater competition in the communications field, and greater diversity of suppliers--for urban users. But such developments may threaten rural users by undercutting the "rate averaging" by which the Bell System averages high-cost, low density, rural areas with lower cost-per-subscriber services in the cities--to the obvious advantage of rural users. An important communications policy issue, noted Ted, is the potential effect of new communications entities, such as MCI, engaging in "cream skimming'--i.e., serving only high traffic, high profit, routes and leaving local phone

companies without the benefit of "separations payments" though which they now share in Bell's long distance revenues.

Gail again targeted some basic issues: What makes a good rural education? Are not the differences within the spectrum of rural education as great or greater than those which divide rural from urban? How can local control and local culture be perserved, particularly when most money comes from "outside"? And if local values are to be respected, does that include local racial and class prejudices? How can adequate sex education be provided in an ultra-conservative community?

The greatest need, Gail opined, is for basic education--to improve the the literate and numerate skills of both pupils and teachers. But technology for education cannot be considered without also giving attention to the need for rural economic development. Otherwise, we'll be doing no more than training youngsters to leave home.

Gus Root led the group through a review of the major points raised by each of the presentations, noting that the focus of our activities must be on the identification of:

Problems--those administrative and instructional difficulties to which telecommunications might be applied, and--

Strategies--which can tap existing power structures and which can give rural practioners a sense of "ownership equity" in the use of communications technologies to deal with their perceived problems.

The printed agenda called for the formation of three task groups to deal with Rural Needs, the Identification of Demonstration Projects, and Research Needs. Gus wisely decided to ignore those preconceptions. The vitality of the presentations and the groups' reactions and contributions mandidated a new definition of the questions to be addressed, and Gus, with the concurrence of the full group, set new Task Group topics:

Gus took felt point pen in hand to create a "Chinese wall poster" giving the groups their orders.

"In each Task Group," he wrote, "consider educational-adminstrative-institutional problems to which appropriate techology could make significant contributions."

Group 1 on the Needs of Learners, Administrators, Institutions

a. great variability within and between communities

b. stay very practical

c. what demonstrations needed?

d. how implement versions of existing knowledge?

e. what research needed to gain new knowledge?

Group 2 on Strategies for Approaching the Power Structures in Schools, Communities, States, Etc.

a. coordination with other agencies, projects, etc.

b. uses of appropriate technologies

c. what demonstration projects needed?

d. how implement new versions of what others have done?

e. what research is needed?

Group 3 on Strategies for Stimulating Feelings of "Ownership" in People and Institutions

a. an information network, so people can get information on other's activities

b. how buy into only selected technologies?

c. what demonstration projects needed?

d. what research is needed?

e. what is practical?

. . .and the formal presentations, and the discussions, and the assignments were the first day.

The second day began with early coffee and Danish, but by 9 a.m. the three Task Groups were hard at work on their separate assignments. At 11:15, they were called together to report, and Bob Filep led off with Group 1's assessment of Needs.

Group 1, Bob noted, had identified several "sub-systems."

1. The need to codify, analyze, and rank those rural needs which have already been identified by the National Seminar on Rural Education, the Western States Small Schools Projects, and other available evidence of what rural educators say their felt needs are,

2. The desirability of identifying demonstration projects and applications of telecommunications in which the needs of learners, administrators and institutions have been addressed with apparent success and cost-effectiveness. . .in other words to continue what Noflett Williams had already done for this group. . .seeking out what has been done before rushing off to discover the already-known.

(Gus noted that high priority needs in rural areas may not always provide a case study, and NIE may need to address afresh some pressing problems which have not previously been attacked.)

3. Spying out what's coming down the pike in technology and communications. The development of stand-alone micro-computers and the emergence of large data bases are developments which may have relevance for

rural education. In a field so dynamic, past experience is not the only guide to what might be done.

4. Identifying the training requirements necessary to provide the environment in which the use of telecommunications can move ahead. The concept of a cadre of Rural Educational Telecommunications Agents would require, not new personnel in the field, but the development of new skills on the part of those who are already in touch with rural education, persons who may now be associated with the state educational agency, the regional educational service agency, or the university. An IN-WATS 800 telephone number might be a useful tool.

5. Establishing the schedule of questions which should be asked, including broad systems questions as well as the technical questions.

6. Finally, defining the parameters of a dissemination network; one which would let potential users know what software has already been developed and is available, tapping the resources of PLATO, the National Center for Educational Media, etc., and looking toward the development of a "newsstand" concept, from which potential users could select the most timely and relevant materials suited to their local needs.

In the discussion which followed, Lou Bransford called attention to the need to catalogue what experience rural educators will need, in order to comprehend technology. He suggested that clustering by vocational and career objectives might be a useful tool, and that all the costs for end-to-end service should be analyzed.

Noflett Williams reported for Group 2 on its consideration of the means for gaining the interest and cooperation the local power structure, noting that:

1. Many of the needs already identified could be addressed by telecommunications.

2. Rural educators need assistance, both in understanding their telecommunications options and in writing effective proposals to funding agencies.

3. NIE can assist by providing information which describes the available telecommunications options and providing examples of their uses. This needs to be done at regional, state, and national levels.

4. Groups like the American Association of School Administrators, the National School Boards Association, etc., could conduct one-day workshops, building upon written materials and showing how telecommunications could be applied, with experienced practitioners there to field questions. Such efforts should include the "gatekeepers," those members of the local power structure who have the power to say "yes" or "no," as well as those who can grant credit for in-service training.

5. For proposals, there should be a simple form for responding to Requests for Proposals--perhaps something like the procedures used by the Fund for the Improvement of Postsecondary Education, where a five-page

prospectus is submitted, with additional details requested from those who pass the preliminary screening. Required information would include:

a. how technology is now being used

b. identification of the needs to be addressed

c. a description of how the technology would be applied

d. what other agencies (health, community development, etc.) benefit from multi-purpose applications

e. how representatives from other beneficiaries would be involved in an advisory capacity

f. a list of those who have been contacted (including those in in the informal--but important--political power structure.

Hugh Pursel pointed out that planning ought also to take place "from the top down," involving the leadership in the appropriate national organizations and agencies, so that they, too, have "ownership."

Gail Parks announced that the National Rural Center is now planning its second seminar on Rural Education, to be held in Marshall, Minnesota, in June, 1981--an opportunity to develop just such involvement.

Bob Filep added these points: Needs assesments ought to be undertaken by those who have credibility with the local participants, with, of course, sound methodology to develop defensible data. Assurance should be sought that local dollars will be available for the continued support of successful projects. At the national, as well as at the local level, coordination should be sought among agencies--NIE should apprise itself of what other Federal agencies are doing in the rural applications of telecommunications.

Tom Schultz, NIE Senior Research Associate, was chosen to report the work of Group 3, which recommended that we begin immediately with the persons and resources available to us.

1. Providing materials and resource people to those in rural education who now give help to teachers and administrators.

2. Commissioning two papers, to be distributed through those organizations represented at this meeting, on

   a. funding sources

   b. examples of technology already in use.

3. Charging each of us to "preach the gospel," and, when possible, to include sessions on the subject at future professional meetings.

4. Keeping this group informally organized, and planning to meet together again in about six months

   a. to assess our progress to date

   b. to plan longer term strategies

Walt Turner suggested that we capitalize upon existing networks and structures--including his own organization, the American Association of School Administrators, and the National Education Association, and the American Federation of Teachers.

Teachers and principals have to feel comfortable with any new technology, and that is most likely accomplished through of someone in the field who can act as a catalyst, someone like Hugh Pursel, who can show people how to apply the technology. But these people, themselves, need training.

Walter G. Turner is Associate Executive Director of the American Association of School Administrators, having joined AASA in 1971 after an extensive background in rural and regional educational administration. A native of Oregon, he was educated in that state at Pacific University, Eastern Oregon College, and at the University of Oregon. His Ed.D. is from the University of Northern Colorado. Before joining AASA, he was with the Colorado Department of Education, and was Executive Director of the Northern Colorado Board of Cooperative Services. He is currently AASA's representative on the Small Schools Committee as serves as Executive Director of the American Association of Educational Agencies.

Walt had a number of suggestions regarding what should be chosen for dissemination:

1. Identify succesful operations.

2. Start at the state level (but get people like Kerry Nelson to persuade the chief state school officers that this is important).

3. Look to states such as Utah, Nebraska, North Carolina, Georgia, Arizona, and Iowa, where the prospects for interest are high.

He emphasized the need for disseminating information on funding sources and on existing projects which could provide new insights for rural educators--information which could be distributed through existing small school networks and through already scheduled meetings.

. . . and the reports and the discussion were the morning of the second day.

After lunch, Gus convened the final General Session, and Mary Helen dared to ask a question seldom openly raised at any workshop:

"Did NIE get out of the meeting what it wanted?"

"Yes," came the answer, "but not what we expected."

What NIE got was a modest, practical, do-able strategy from a number of technology experts and practicing rural educators who had, in two days time, already established their own feelings of "ownership" regarding the problem.

Unlike many (if not most) conferences on education and technology, this one had not resulted in recommendations for new legislative mandidates and multi-million dollar programs through which the Federal government would "throw money" at the problem. The group's collective enthusiasm and eagerness to move ahead now, combined with the hard-nosed realism about the difficulties of getting new monies and new programs from NIE and the Congress, had drawn the focus away from some of the anticipated goals, such as providing NIE with a long-range agenda for an "effective rural technology iniative," postponing such considerations until more experience can be developed on the basis of what can be done now, with the resources already at hand. A practical, if modest, strategy, rather that a "shopping list" of proposals for grand demonstration projects.

NIE's Al Feiner captured the essence of the thinking of all three Task Groups when he noted that each had focused on the need to get available information into the field, starting now. And the need to build on the momentum already generated in these two days among the members of this group.

There were many contributions to the discussion in this final session and there quickly developed a broad consensus that there were important first steps which could, and should, be taken immediately:

- Distribution of the report of this conference.
- A "first cut" packet of case studies, perhaps 10-20, briefly reported in a page or two, and using a common format.
- A list of potential funding sources.
- Consultation, available on an informal basis from members of this group, perhaps with NIE support.

At the same time, in was suggested, potentially interested national organizations, in and out of government, should be "brought up to speed."

Kerry Nelson expressed a willingness to test the water, delivering these materials to his constituents in Utah, and feeding back their reaction to NIE and this group.

Gus noted that the materials should be related to the real needs of rural education. Jerry Fletcher quickly that with what is already known, he, Gail, and Tom Shultz could quickly assemble a begining schedule of needs which most rural educators would recognize and identify as their own. It was agreed that such a list would be useful in selecting case studies which are relevant to real problems.

Mary Helen and Hugh echoed Kerry's willingness to try out the group's efforts in their own environments, and report back to NIE and the group.

All the elements seemed in place for an effort to put technology in the service of rural education--to quote the song title--"Statring Here, Starting Now." By the begining of the new school year, some of the participants at this meeting, drawing on their own knowledege and experience, would be compiling a list of needs common to many rural schools, educators, and pupils. Others members of the group would be compiling some twenty or so case studies. Those connected with key national organizations would move to get technology and rural education "on the agenda" to let their constituencies know that an effort to employ the latest weapons to attack rural education's oldest problems had already begun with a pilot program. "Boot-strap" as that modest effort might be, it would, thanks to the enthusiastic participation of those members of the group who live and work in rural America, be no exercise in theory by Washington "experts."

The NIE participants felt they could find within the budget the modest amounts needed for the preparation of papers, maybe so consultant visits in the field, and to bring this group together again in about six months to ask themselves. "How are we doing?"

If that question could be honestly answered even half as positively as the group now expected, if, at the grass roots level where it counts, administrators, teachers, and community leaders were as interested in technology-made-understandable as these two-day had made those who had shared them, we'd be well on the way to making a prima facie case to present to the National Institute of Education, the Department of Education, and/or the Congress.

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